



Mysterious Case of Glossopharyngeal Neuralgia

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Introduction

- **Trigeminal (TN) and glossopharyngeal (GPN)** neuralgias are common neuropathic syndromes that cause maxillofacial pain
- Due to their similar clinical presentations, differentiating between TN and GPN can prove to be challenging for most clinicians
- **Symptoms at presentation**
 - **TN:** Shocking pain that is most commonly experienced over the side of the face. It can affect one or multiple aspects of the face: the ophthalmic (V1), zygomatic (V2), or maxillary (V3) zones
 - **GPN:** Deep, unilateral, sporadic, sharp pain localized to the oropharyngeal area
 - Both conditions have specific triggers
- **Prevalence**
 - GPN - approx. 0.8 cases per 100,000 in a year
 - TN - 4.7 cases per 100,000 per year
- This case shows utility of **topical anesthetic nerve block of CN IX**
- Assisting the diagnosis of GPN initially confused as TN

Methods for Topical CN IX Nerve Block

- **Numeric Rating Scale (NRS):** Determined severity of pain before and 30 minutes after topical application of 2% viscous lidocaine
- Patient inserted wick, saturated with 2 % viscous lidocaine, into their posterior oropharynx until contact was established
- Strong and sensitive gag reflex elicited
- Required serial applications of the wick; each time, gag reflex became weaker
- **Process repeated until pain reduced to 0/10**

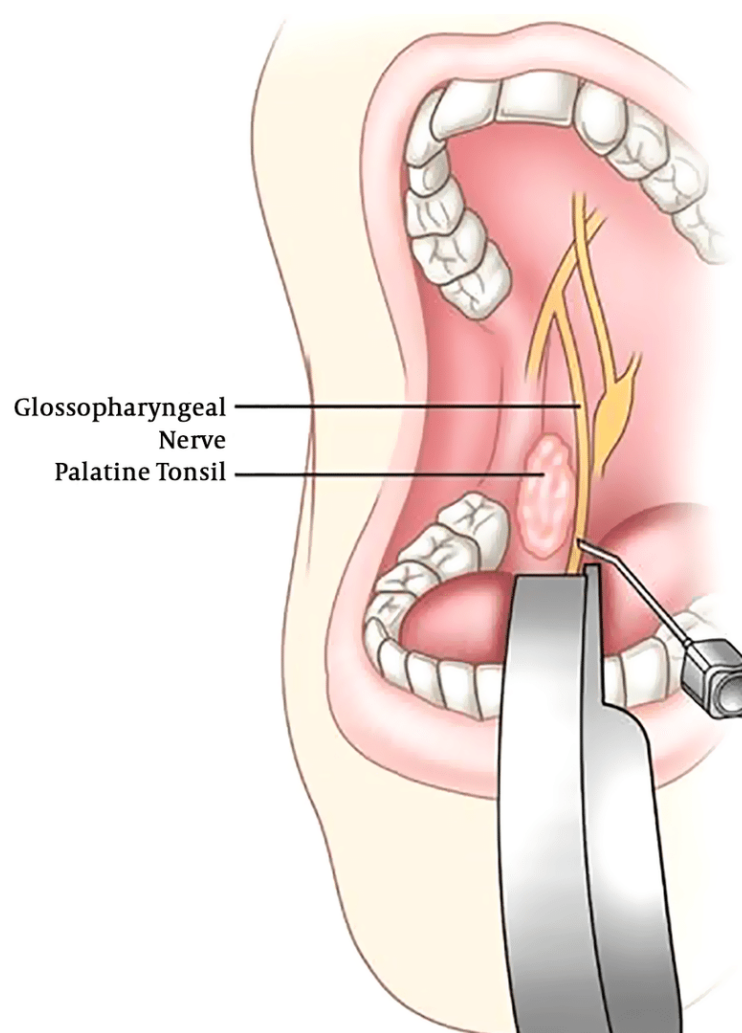


Figure 1: Diagram depicting CN IX block

Case Report: 55-year-old male presented to the Stanford ED with acute-on-chronic left auricular pain

- **Past Medical History:** Hypertension, OSA on CPAP, left cisternal TN secondary to venous compression and right superebellar artery contacting the right proximal cisternal trigeminal nerve
- **Pain Symptoms:** Tingling in his left ear with intermittent explosions of deep, dull pain
 - **Location/Duration:** Left periauricular pain for 1 year
 - **Radiation:** Left side of throat and over posterior oropharynx
 - **Frequency:** Occurring every 30–40 minutes, approximately 40 episodes/day
 - **Timing:** Episodes lasting a minute in duration
 - **Severity:** 8-10/10 and increased to an agonizing 10/10 pain score
 - **Triggers:** Eating, talking, and lying on the affected side
 - **Life Impact:** Waking several times a night. Impacted all aspects of daily life. Pain forced patient to quit their job and go on disability
- **Physical Exam:** grossly unremarkable, except for reproduction of pain with jaw movement and periauricular pressure
- **Pre-admission Medications/Interventions:** Carbamazepine 600 mg BID and Gabapentin 600 mg TID, Failed out-patient Botox trials
- **Diagnostics:**
 - **Additional Testing:** Topical CN IX nerve block (as described on left)
 - **Results:** Resolution of continuous pain and a 50% reduction in triggered pain
 - **Imaging:** CT head and neck, **showed elongated styloid ligaments ~3 cm**
- **Diagnosis:** *Glossopharyngeal Neuralgia Secondary to Eagle Syndrome*
 - **Treatment:** craniotomy for decompression of left GPN
 - **One month follow-up:** Sustained resolution and off all prior pain medication
 - **Impact:** Increased quality of life and was approved to return to work as a forklift driver.

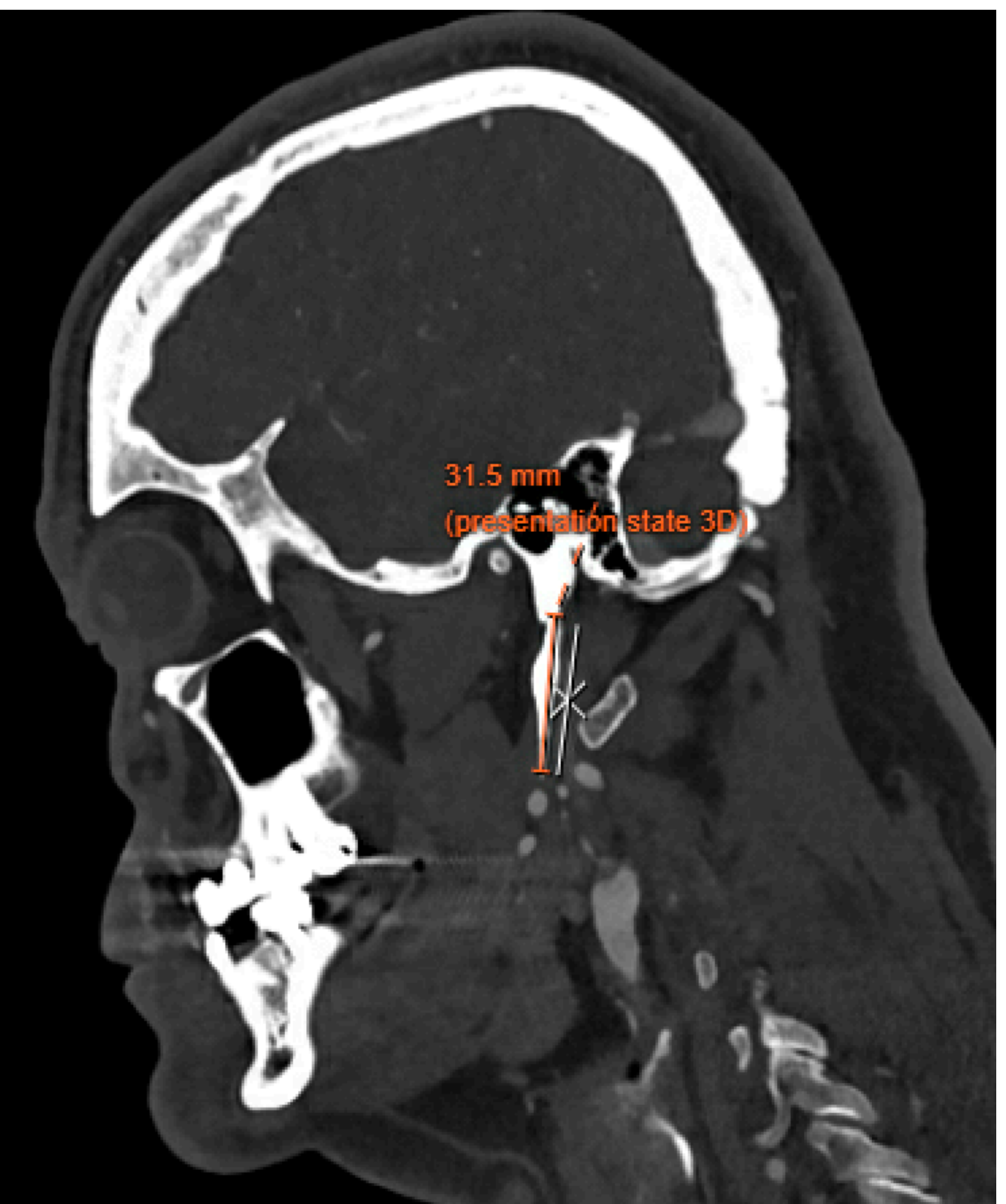


Figure 2: CT Head Neck Angiography with and without IV contrast (sagittal view) depicting elongated styloid process, measuring 31.5 mm (normal length 20-30 mm)

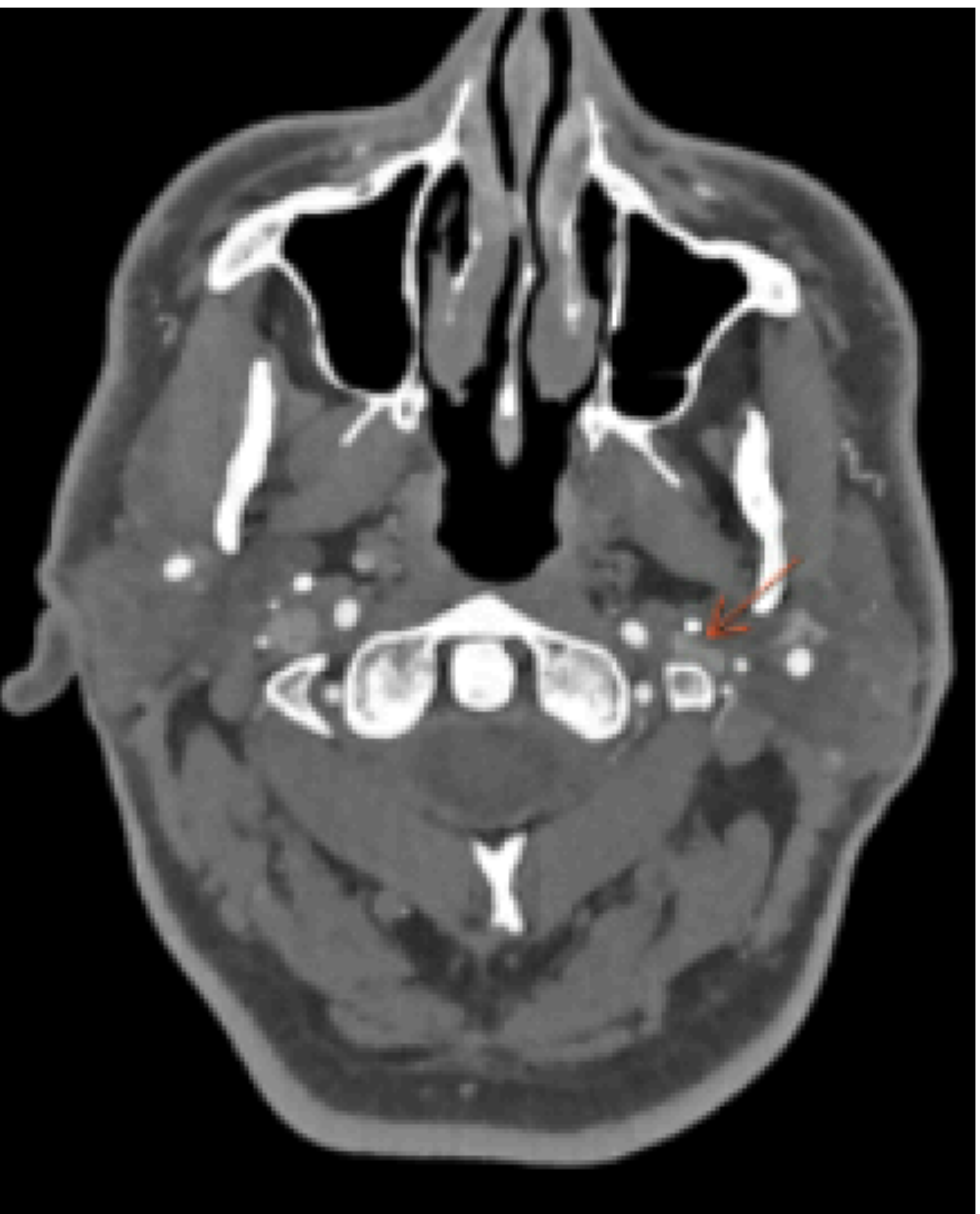


Figure 3: CT Head Neck Angiography with and without IV contrast (axial view) depicting cross-section of elongated styloid process

Conclusions

- Glossopharyngeal neuralgia (GPN) is a rare pain syndrome that involves damage or distortion of the ninth cranial nerve
- Characterized by unilateral, episodic, and severe sharp pain that can involve one or several regions of posterior oropharynx
- Triggers: chewing, coughing, yawning, speaking, swallowing, or other movements of the jaw or mouth
- GPN can mimic TN
- Requires broad differential
- Misdiagnosis leads to unnecessary and invasive medical procedures
- Advanced imaging to identify potential sources of nerve compression is vital
 - CT and plan film can identify elongated styloid processes, such as those seen in Eagle syndrome
- **Eagle Syndrome:** rare etiology causing compression of CN IX. Requires an interdisciplinary medical approach for treatment



Figure 3: Maximum intensity 3D CT-scan volume rendering calcification of the stylohyoid ligament

References & Disclosures

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Disclosures: none